

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

RESPONSIVENESS SUMMARY

FOR THE
LAFARGE MIDWEST, INC.
JOPPA CEMENT PLANT EXPANSION PROJECT
IN GRAND CHAIN

August 2006

Bureau of Air
Facility Identification No.: 127855AAA
Application No.: 05100026

Table of Contents

	Page
Decision	3
Background	3
Comment Period and public Hearing.....	3
Availability of Documents	4
Appeal Provisions	4
Questions and Comments	5
For Additional Information.....	12

DECISION

On August 1, 2006, the Illinois Environmental Protection Agency (Illinois EPA) issued a Bureau of Air construction permit to Lafarge Midwest for its new plant expansion project at its facility located at 2500 Portland Road in Grand Chain.

Copies of the documents can be obtained from the contact listed at the end of this document. The permits and additional copies of this document can also be obtained from the Illinois EPA website www.epa.state.il.us/public-notices/.

BACKGROUND

On October 14, 2005, the Illinois EPA, Bureau of Air received an application from Lafarge Midwest, Inc., requesting a permit to expand its cement manufacturing operations at its Joppa Cement Plant, located in Grand Chain, Illinois. The expansion project will mainly consist of the following activities:

- Installation of two new preheater/precalciner kiln systems
- Shutdown of one of the two existing kilns (kiln #2)
- Installation of two new finish mills
- Ancillary changes to material handling operations

The Illinois EPA is issuing a construction permit to authorize the expansion project. The permit identifies the applicable rules governing emissions from the plant, and establishes enforceable limitations on its emissions. The permit also establishes appropriate compliance procedures, including requirements for emissions testing, continuous emission monitoring, record-keeping, and reporting. The Permittee will be required to carry out these procedures on an ongoing basis to demonstrate that the plant is operating within the limitations established by the permit and that emissions are being properly controlled.

COMMENT PERIOD AND PUBLIC HEARING

The Illinois EPA Bureau of Air evaluates applications and issues permits for sources of emissions to the atmosphere. An air permit application must appropriately address compliance with applicable air pollution control laws and regulations before a permit can be issued. Following its initial technical review of Lafarge's application, the Illinois EPA Bureau of Air made a preliminary determination that the application met the standards for issuance of a construction permit and prepared a draft permit for public review and comment.

The public comment period began on April 21, 2006 with the publication of a notice in the Southern Illinoisan on April 28 and May 5, 2006. The notice was also published in the Metropolis Planet on April 26, May 3 and May 10, 2006.

A public hearing was held on June 7, 2006, at the Metropolis Community Center to receive oral comments and answer questions regarding the application and draft air permit. The comment period originally was scheduled to close on July 7, 2006, to receive written comments. The comment period was extended once to specific groups with the comment period ultimately closing on July 17, 2006.

AVAILABILITY OF DOCUMENTS

The permit issued to Lafarge and this responsiveness summary are available on the Illinois Permit Database at www.epa.gov/region5/air/permits/ilonline.htm (please look for the documents under All Permit Records (sorted by name), PSD/Major NSR Records). Copies of these documents may also be obtained by contacting the Illinois EPA at the telephone numbers listed at the end of this document.

APPEAL PROVISIONS

The permit being issued for the proposed project grants approval to construct pursuant to the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21. Accordingly, individuals who filed comments on the draft permit or participated in the public hearing may petition the U.S. Environmental Protection Agency (USEPA) to review the PSD provisions of the issued permit. In addition, as comments were submitted on the draft permit for the proposed project that requested a change in the draft permit, the issued permit does not become effective until after the period for filing of an appeal has passed. The procedures governing appeals are contained in the Code of Federal Regulations (CFR), "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19. If an appeal request will be submitted to USEPA by a means other than regular mail, refer to the Environmental Appeals Board website at www.epa.gov/eab/eabfaq.htm#3 for instructions. If an appeal request will be filed by regular mail, it should be sent on a timely basis to the following address:

U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board (MC 1103B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001
Telephone: 202/233-0122

QUESTIONS AND COMMENTS

1. What fuels is Lafarge using in the kilns?

Lafarge is currently using coal, oil, petroleum coke, natural gas and tires as fuels in the kilns.

2. What fuels will Lafarge be allowed to use after the proposed expansion? Will Lafarge be burning trash? Plastics? Hazardous waste? We would assume that Lafarge would need to apply for an additional permit to burn these substances. Is this a correct assumption? How would the public find out about any change of operation at the facility?

Under the construction permit, and as in the past, Lafarge will only be permitted to use coal, oil, petroleum coke, natural gas and tires. They will not be allowed to burn trash. If Lafarge wants to use fuels other than those they are currently allowed, they will be required to obtain a new or revised permit.

3. Please define “other supplementary fuels.” Will Lafarge have to notify the Illinois EPA and do additional emission testing if it chooses to burn these other fuels?

Other supplementary fuels, as this term is used in cement production, are materials other than traditional fuels that have properties that make them suitable for use as fuel. Lafarge must notify the Illinois EPA if it wants to combust such fuels, as a new or revised permit would be required to address particular supplemental fuels. The need for emissions testing would be determined on a situation-specific basis, considering the nature of the supplemental fuel and the amount of such material that would be used.

4. What pollutants are emitted from burning tires? Lafarge has to be required to test for those pollutants and to report the results to the Illinois EPA.

In a kiln or boiler, tires have emissions that are similar to those of coal. Cement kilns are excellent devices to burn tires, as well as provide fuel for the process. When combusted in the open, tires produce large quantities of emissions that are the result of incomplete combustion. On the other hand, a cement kiln provides controlled conditions to effectively complete the combustion of the tires. In addition, due to the location of tire combustion in a kiln, nitrogen oxide (NOx) emissions in a cement kiln are actually reduced, by the use of tires.

5. We understand that Lafarge is permitted to use waste tires as fuel, and has been using tires as fuel for two years. This raises questions about how many tires they store at a time, since tires can be both a fire hazard and also a health hazard. We are especially concerned about West Nile virus. Has the Illinois EPA checked into their tire storage to determine whether or not Lafarge needs a permit for tire storage? Are the tires stored indoors or outdoors?

The Illinois EPA conducts routine inspection of the tire storage areas. This operation is subject to State regulations at 35 IAC Part 848, Management of Used and Waste Tires. Tires are received and stored dry in enclosed trailers, prior to being used as fuel. Receiving and storing dry tires eliminates the potential for mosquito infestation and the spread of the West Nile virus.

6. Lafarge should be investing in nonpolluting alternative energy sources, in addition to their burning of coal and other fuels.

The production of Portland cement is a thermal, chemical process for which alternatives to burning of fuels are not yet available.

7. The permit for the proposed expansion should include carbon dioxide (CO₂) limitations, otherwise Lafarge will need to retrofit the plant in the future to comply with future CO₂ regulations.

Lafarge is not required to control or reduce CO₂ under current regulations, nor does the Illinois EPA have the authority to address CO₂ emissions in permitting. However, one result of this expansion project will be an improvement in the energy efficiency of Lafarge's plant. This will act to reduce the tons of CO₂ emitted per ton of cement produced.

8. Since Lafarge is asking for an adjusted standard for two installations to allow for burning waste oil, will this increase emissions for any air pollutants using the current fuels? [This question relates to Adjusted Standard AS 06-3, Petition of Lafarge Midwest, Inc. for Boiler Determination Through Adjusted Standard Proceedings Pursuant to 35 IAC 720.132 and 720.133, filed with the Illinois Pollution Control Board.]

The slight increases in emissions of certain pollutants that would accompany these adjusted standards have been addressed in the proceedings before the Board. The changes in emissions from the expansion project are accounted for appropriately in the netting analysis in the construction permit (see Attachment 4 of the permit for further details).

9. Lafarge has said in their application that sulfur dioxide (SO₂) emissions will increase. Has this been taken into consideration for the issuance of the proposed expansion? Lafarge plans to "net out" of PSD for emissions of SO₂ and nitrogen oxides (NO_x). Since the proposed project's increase in emissions is close to the significance threshold for these pollutants, we are concerned about this. Did the Illinois EPA take into account increases in emissions at all sources at the plant, not just the two new kilns, but also other processes, increased truck traffic, etc.? At the very least, a permit has to require rigorous monitoring to ensure that Lafarge does not trigger the PSD threshold.

Yes, SO₂ emissions have been considered in the netting, as have the emissions from the other units at the plant. Attachment 4 of the permit provides the netting analysis which demonstrates that although there will be a net increase of SO₂ from this expansion project,

this increase will not be significant (i.e., will be less than 40 tons per year). The maximum emissions in the permit for NO_x and SO₂ reflect the future potential rates that Lafarge projects to emit, which are above the actual emissions they generated in the past. However, the rates of actual emissions should in all likelihood be less than the amounts limited in the permit. Lafarge is required to monitor SO₂ and NO_x emissions from the kilns, which are the principal sources of these emissions.

10. Netting must be based on historic baseline emissions plus the increase, minus any creditable decrease. The Illinois EPA seems to wrongly assume that any decrease is creditable. Non-creditable decreases include emissions when a source was in violation and their allowable emissions were lower than baseline emissions, in other words, when they emitted more than they should have. The Illinois EPA stated at the hearing that it cannot answer the questions about violations. Without this knowledge, the Illinois EPA cannot ensure that the netting was done properly and that the source is not in fact going to trigger PSD.

The Illinois EPA is not aware of any violations that would affect the netting exercise. If it is determined that there are violations that would indicate that the netting analysis is incorrect, appropriate action would have to be taken, e.g., the permit would have to be modified to reflect the correct baseline and reduce permitted emissions from the expansion project.

11. When performing netting, emissions decreases have to be qualitatively the same as emissions increases. I saw no discussion about this in the permit or project summary. Has the Illinois EPA verified that the emission decreases are qualitatively the same as the emission increases? When doing an analysis of this, hourly emissions, rather than annual emissions, should be compared to determine if the decreased emissions are the same. Please provide evidence that such analyses have been conducted.

Because a cement plant essentially operates continuously, concerns about the effects of relative timing of emissions increases and decreases on ambient air quality are not posed. This is particularly true as many of the emissions decreases involve ground level emissions, which would have had a greater impact on local air quality than the emissions increase at the new kilns, which have stacks.

In addition, the pollutants emitted from the new kilns will exhibit the same qualitative characteristics as the emissions decreases. The chemical composition of the particulate matter emissions from different operations at cement plants do not support distinctions between the particulate matter emissions based on qualitative characteristics. In this regard, the USEPA has not established Maximum Achievable Control Technology (MACT) standards that address specific metals present in particulate matter emissions from different operations, but simply set limits in terms of particulate matter.

12. What is BACT for SO₂ and NO_x?

Since PSD was only triggered for CO and not SO₂ or NO_x, BACT was only required for CO. The application did not address BACT for SO₂ and NO_x, nor has the Illinois EPA made a determination of BACT for the expansion project for these pollutants.

13. The RBLC (RACT/BACT/LAER Clearinghouse) is not always updated. What other sources did the Illinois EPA consult to arrive at its decision for BACT for CO?

The Illinois EPA also relied upon the information from Lafarge's application that addressed certain existing kilns. This information demonstrated that Lafarge's proposed CO limit, based on a 12-month rolling average, was tighter than most other newly adopted limits. The Illinois EPA also added an 8-hour block average requirement into the permit that was not in original application. This was done to have both long-term and short-term limits for CO emissions. These limits are adequate to assure that good combustion practices are effectively used to control CO emissions.

14. What pollutants is Lafarge required to monitor for? How often do the pollutants need to be monitored? Are there now or will there be continuous emission monitors (CEM)? If not, why not? How are carbon monoxide (CO) emissions measured? Will there be CEMs for CO? If not, why not?

Lafarge will be required to monitor emissions of SO₂, NO_x, CO, and opacity from the kilns. Emissions from each kiln will be measured electronically by a continuous emissions monitor (CEM) that determines the concentration of CO in the exhaust, e.g., in parts per million (ppm). Monitors measure and record pollutant emissions on an hourly basis, using readings taken no more than fifteen minutes apart. The data collected by the monitors is then converted to produce results in units of the applicable emission limitation or standard. Monitoring is required at all times that a kiln is in operation.

There are currently CEMs for CO, NO_x, and SO₂ as well as a continuous opacity monitor for opacity on the existing kilns, and the new kilns will also be required to have them installed, operated and maintained for these pollutants at all times the kilns are in use.

15. What is the hourly/daily/monthly limit for these pollutants, most notably CO? How often is it measured? How often are the measurements reported?

A detailed table of emission limits can be found in the Tables in Attachment 2 of the permit. CO emissions from each new kiln are limited to 2.5 lbs per ton of clinker produced, based on a 12-month rolling annual average. In addition, CO emissions from each new kiln cannot exceed 5.0 lbs per ton of clinker produced, based on an 8-hour block average (excluding periods that include startup and shutdown of a kiln). Refer to Conditions 4.1.2, 4.1.3 and 4.1.6 for the raw mills, cement kilns and clinker coolers, and Conditions 4.x.6 for other units. Refer to Attachment 2, Table 1 for the limits in tabular form.

16. How often are CO measurements reported?

CO measurements that are in excess of any limit in the permit are required to be reported on a quarterly basis.

17. How will Lafarge be reporting their emissions?

Lafarge will report emissions by submitting them quarterly to the Illinois EPA. In addition, Annual Emission Reports will be required for each calendar year and must be reported by May 1 of the following year.

18. How often is Lafarge required to perform emission testing?

After initial performance testing of new equipment is conducted, Lafarge will be required to conduct testing on a periodic basis; namely, five years after the kilns, mills and clinker coolers were tested, they will have to be tested again for each pollutant, except in the case of dioxin/furans, whereby tests must be conducted 30 months after the last test. This is required under 40 CFR 63.1349(b) (the National Emission Standard for Hazardous Air Pollutants for Portland Cement Plants).

19. Is Lafarge currently in compliance with all pollution regulations? The USEPA's ECHO database, which is available on the Internet, states that Lafarge has some unresolved violations. What are these violations? Are there any other outstanding violations other than those referred to on the ECHO database?

During the period September 2003 through January 2004, the Illinois EPA issued four violation notices to Lafarge, citing apparent violations of emission standards and related requirements. The violation notices issued September 11 and November 7, 2003, alleged excess emissions of dioxin/furan from Kiln 1, in apparent violation of the National Emission Standards for Hazardous Air Pollutants ("NESHAP") for Portland cement manufacturing plants. In November 2004, emission testing was conducted which demonstrated that Kiln 1 was complying with the NESHAP standard for dioxin/furan.

A third violation notice was issued on November 26, 2003, which resulted from Lafarge's failure to timely submit a Clean Air Act Permit Program ("CAAPP") annual compliance certification for calendar year 2002. The Illinois EPA subsequently received the requisite compliance certification on January 16, 2004.

A fourth violation notice concerned an apparent discrepancy in the payment of fees, which has also been resolved.

On January 17, 2003, the USEPA issued Lafarge a request for certain information to determine whether their Grand Chain plant operated in compliance with the Clean Air Act and regulations thereunder. Lafarge provided the requested information and the USEPA has not issued any notice of violation. While the Illinois EPA is aware of information contained within the USEPA's Enforcement & Compliance History Online (ECHO) database that indicates violations of the PSD regulations by Lafarge at its Grand Chain plant, the USEPA has not supplied the Illinois EPA with documents setting forth the specific nature and scope of these alleged PSD violations referenced in the ECHO database. Questions about these alleged violations should be directed to USEPA, although one should be aware that certain information relative to ongoing enforcement actions is not subject to public disclosure under applicable law.

20. Has the Illinois EPA ever received complaints from the public concerning Lafarge's existing operation?

The Illinois EPA is not aware of any recent complaints since Lafarge added a baghouse to Kiln 2 and transferred the ESP that was on Kiln 2 to Kiln 1. It had been many years before that the Illinois EPA received complaints regarding the operation of the Lafarge plant. Most complaints were the result of poor maintenance and operations on the control equipment on the kilns.

21. Did USEPA or Illinois EPA do air modeling for this area? If not, why not? What impact will the projected CO emissions for Lafarge have on ambient air quality? How close will Lafarge be to an actual increment consumption? Will this high amount cause the area's ambient air quality to be close to noncompliance?

The potential effects of this project, as it increases CO emissions were addressed with modeling. In its application, Lafarge submitted air quality modeling for CO, which the Illinois EPA reviewed. The modeling analysis indicates that the proposed project will not have a significant impact on CO air quality. (There is no increment for CO.)

It is worth noting that the ambient air monitoring stations operated by the State of Kentucky in Paducah show that air quality in the region presently complies with the National Ambient Air Quality Standards.

22. How can we get the results of the air modeling for SO₂ and NO_x?

Under PSD, air quality modeling is only required for those pollutants that trigger BACT. For this project, the emission increase for SO₂ and NO_x did not reach the significance threshold of 40 tons per year under PSD. Accordingly, neither pollutant was subject to PSD review (see Question 11), and air quality modeling was not required for these pollutants.

23. I am concerned about the role of SO₂ emissions in causing Acid Rain, which is an environmental problem all along the Appalachian Mountains and in the northeastern United States.

Coal-fired power plants are the main source of SO₂ emissions that are implicated in the formation of Acid Rain. The emissions of SO₂ from power plants are addressed on a national basis by the USEPA, currently through the Acid Rain program and in a few years through the Clean Air Interstate Rule.

24. What are the other major sources of emissions in the area? Is Illinois EPA concerned that the ambient air quality will be impacted by Lafarge to the point that it will be difficult for other industry to develop in the area?

Other major sources in Illinois that are located near Lafarge are Electric Energy in Joppa (a power plant), Trunk Line Gas in Grand Chain (a natural gas compressor station), Ohio Power Co. coal terminal in Metropolis and Honeywell in Metropolis. In Kentucky, major sources include the TVA Grahamville power plant and the United States Enrichment Company (a uranium enrichment plant).

The expansion project at Lafarge will not cause a significant impact on air quality for CO. In addition, in 2004, the maximum CO concentrations measured for Paducah, Kentucky were less than 3 ppm (8-hour average), where the National Ambient Air Quality Standard for CO is 9.0 ppm (8-hour average). Given that the impact from the expansion project will not be significant, CO air quality in the region should not be affected appreciably by the project.

25. 35 IAC 212.421, which addresses the opacity from any Portland cement process, does not apply and should be removed from the permit because this state emission standard has been determined invalid by the courts.

While this State emission standard differs from the federal New Source Performance Standard (NSPS), this does not mean that it is invalid. 35 IAC 212.421 states, “No person shall cause or allow the emission of smoke or other particulate matter from any Portland cement process for which construction or modification commenced on or after April 14, 1972, into the atmosphere having an opacity greater than 10 percent.” On the other hand, the relevant NSPS requires 20 percent opacity on new kilns and 10 per cent on other new units at Portland cement plants. Thus, 35 IAC 212.421 and the NSPS only differ on the opacity limit for kilns. Based on the Illinois EPA’s review of the history of Illinois’ particulate matter and opacity standards, 35 IAC 212.421 has not been invalidated by the courts.

26. When will the public expect answers to my questions at the hearing?

This Responsiveness Summary addresses the questions raised during the comment period.

27. Who in the Illinois EPA would be the contact person for obtaining these answers?

Bob Smet is the principal contact who addressed most of the responses, although information was also obtained from the Illinois EPA's field office in Collinsville and the Illinois EPA's Division of Legal Counsel.

FOR ADDITIONAL INFORMATION

Questions about the public comment period and permit decision should be directed to:

Bradley Frost, Community Relations Coordinator
Illinois Environmental Protection Agency
Office of Community Relations
1021 North Grand Avenue, East
P.O. Box 19506
Springfield, Illinois 62794-9506

217-782-7027 Desk line
217-782-9143 TDD
217-524-5023 Facsimile

brad.frost@epa.state.il.us